

CLAIMS

1. (original) A rectifier assembly comprising:

a plurality of semiconductor diodes, each diode having an axis defined by an anode and a cathode;

the diodes disposed in an axial linear array;

each two axially adjacent diodes electrically and mechanically connected to each other by a metal plate, each of the diodes connected to the metal plate by solder material, each such connection using a full diode end surface;

the metal plates fixed in relative position by a mounting block;

each diode exposed to surrounding fluid except at its end surfaces.

2. (original) The rectifier assembly of claim 1 wherein each two adjacent diodes are connected anode-to-cathode, whereby the assembly comprises a two-terminal high-voltage rectifier.

3. (original) The rectifier assembly of claim 1 wherein the surrounding fluid is air.

4. (original) The rectifier assembly of claim 1 wherein the surrounding fluid is oil.

5. (original) The rectifier assembly of claim 1 wherein the number of diodes is a multiple of six, and wherein interconnections are provided with the metal plates, whereby the assembly comprises a three-phase bridge rectifier.

6. (original) The rectifier assembly of claim 1 wherein the solder material is high temperature solder material.

7. (presently amended) The rectifier assembly of claim 7 ~~6~~ wherein the high temperature solder material has a melt point greater than 275 degrees C.

8. (original) The rectifier assembly of claim 1 wherein the diodes are hermetically sealed diodes.

9. (original) The rectifier assembly of claim 1 wherein the diodes are silicon diodes.

10. (original) The rectifier assembly of claim 1 wherein each diode defines a respective plane perpendicular to its axis, and wherein for each diode of the assembly, no other diode of the assembly lies within its respective plane.

11. (original) A rectifier assembly comprising:

m times n semiconductor diodes, each diode having an axis defined by an anode and a cathode, n being at least two;

the diodes disposed in n axial parallel linear arrays of m diodes;

each two axially adjacent diodes electrically and mechanically connected to each other by a metal plate, each of the diodes connected to the metal plate by high-temperature solder material, each such connection using a full diode end surface, each metal plate extending to form a part of each of the n axial arrays, each metal plate thus contacting on one face with n diodes and contacting on its other face with n diodes;

the metal plates fixed in relative position by a mounting block;

each diode exposed to surrounding fluid except at its end surfaces.

12. (original) The rectifier assembly of claim 11 wherein each two axially adjacent diodes are connected anode-to-cathode, and wherein each metal plate thus contacts on once face with anodes of diodes and contacts on its other face with cathodes of diodes, whereby the assembly comprises a two-

terminal high-voltage rectifier.

13. (original) The rectifier assembly of claim 11 wherein the surrounding fluid is air.

14. (original) The rectifier assembly of claim 11 wherein the surrounding fluid is oil.

15. (original) The rectifier assembly of claim 11 wherein the number of diodes is a multiple of six, and wherein interconnections are provided with the metal plates, whereby the assembly comprises a three-phase bridge rectifier.

16. (original) The rectifier assembly of claim 11 wherein the solder material is high temperature solder material.

17. (presently amended) The rectifier assembly of claim ~~17~~ 16 wherein the high temperature solder material has a melt point greater than 275 degrees C.

18. (original) The rectifier assembly of claim 11 wherein the diodes are hermetically sealed diodes.

19. (original) The rectifier assembly of claim 11 wherein the diodes are silicon diodes.

20. (original) The rectifier assembly of claim 11 wherein each diode defines a respective plane perpendicular to its axis, and wherein for each diode of the assembly, $n-1$ other diodes of the assembly lie within its respective plane.

21. (original) The rectifier assembly of claim 11 wherein n is two.